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| APPLICATION NO.          | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--------------------------|-------------|----------------------|---------------------|------------------|
| 09/853,790               | 05/11/2001  | Stanley Kremen       | 102105-162-CIP1     | 7098             |
| 34325                    | 7590        | 04/09/2004           |                     |                  |
| STANLEY H. KREMEN        |             |                      | EXAMINER            |                  |
| 4 LENAPE LANE            |             |                      | AMARI, ALESSANDRO V |                  |
| EAST BRUNSWICK, NJ 08816 |             |                      | ART UNIT            | PAPER NUMBER     |
|                          |             |                      | 2872                |                  |

DATE MAILED: 04/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |           |
|------------------------------|------------------------|---------------------|-----------|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |           |
|                              | 09/853,790             | KREMEN, STANLEY     |           |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     | <i>AN</i> |
|                              | Alessandro V. Amari    | 2872                |           |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 09 January 2004.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-40 is/are pending in the application.  
 4a) Of the above claim(s) 2-11,23-35 and 40 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1,12-22 and 36-39 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 11 May 2001 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/13/01; 4/14/2003</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Claims 2-11, 23-35 and 40 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to nonelected inventions, there being no allowable generic or linking claim.

Applicant's election with traverse of subcombination II, claims 1, 12-22 and 36-39 in response dated 09 January 2004 is acknowledged. The traversal is on the ground(s) that the subcombinations should not be used separately since they create a single system to enable preparation of a coordinated and complementary set of holograms that need to be used together. This is not found persuasive because the Applicant is in fact arguing that the subcombinations claimed are usable together since he states, "subcombinations should not be used separately since they create a single system". As explained in MPEP 806.05(d), restriction is proper when two or more claimed subcombinations, disclosed as usable together in a single combination can be shown to be separately usable. The examples offered by the Applicant in regard to claims 12 and 33, actually provide evidence supporting the Examiner's position since the front projection screen of claim 12 produces magnified pseudoscopic three-dimensional images (i.e., separate utility) and claim 33 produces orthoscopic images (i.e., separate utility) used together in a single combination as stated by the Applicant in his response.

Therefore, the requirement is still deemed proper and is therefore made FINAL.

### ***Claim Objections***

2. Claims 12-22, 38 and 39 are objected to because of the following informalities:

Regarding claim 12, line 37, the term “form” appears to have been deleted by mistake and should be recited in the claim. Appropriate correction is required.

Regarding claim 38, the phrase, “some of the elements comprising said first and second optical arrays” lacks antecedent basis since only the arrays have been recited in claim 1. Claim 39 inherits the same issue.

Claims 12-22 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 12 which is dependent from claims 1, 36 and 39 describes a method of preparing a hologram to be used to be used as a front projection holographic screen but does not utilize the features that are recited in the independent claim 1, for example, passing diffuse coherent light through first and second optical arrays as shown in Figure 5. A claim which either contradicts or removes limitations from the claim therefrom is not a proper dependent claim, see MPEP 608.01(n), section II.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1, 12-22 and 36-39 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably

convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In regard to claim 1, the specification does not describe the limitations of "the distances between the centers of focusing means of the second optical array are a multiple of the distances between the corresponding focusing means of the first optical array" or "wherein the focal lengths of the focusing means of the second optical array are the same multiple of the focal lengths of the corresponding focusing means of the first optical array". The "distances" or "focal lengths" are not described in the specification. Claims 36-39 and 12-22 inherit the same issue. These limitations constitute new matter.

Regarding claim 12, the phrase, "spherical wavefront that appears to have been generated at an expected projection distance" is not described in the specification. The term "expected projection distance" is not described in any way. Also, the phrase, "said focal distance being calculated based upon the distance between the line of light and an adjacent line of light" is not described in the specification. Claims 13-22 inherit the same issue. These limitations constitute new matter.

Regarding claim 38, there is no description in the specification of the recitation of "the remaining elements are comprised of other types of optics". Claim 39 inherits the same issue. This limitation constitutes new matter.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 12-22 and 39 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 12, the phrase, “spherical wavefront that appears to have been generated at an expected projection distance” is vague and indefinite. The term “expected projection distance” is unclear since the meaning of “expected” is a relative term. Also, the phrase, “said focal distance being calculated based upon the distance between the line of light and an adjacent line of light” is unclear as to the meaning of a line of light and an adjacent line of light. Claims 13-22 inherit the same issue.

Regarding claim 39, the phrase “a hologram” is vague and indefinite since it is unclear whether “a hologram” is an additional element or the same hologram recited in claim 1. Claims 12-22 inherit the same issue.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1, 12-22 and 36-39 are rejected under 35 U.S.C. 102(b) as being anticipated by McGrew US Patent 4,421,380.

In regard to claim 1, McGrew teaches (see for example, Figures 3, 4, 6, 7) a method for making a coordinated and complementary set of holograms comprising at least one hologram, to be used in a system for recording and projecting three-

dimensional images, wherein said three-dimensional images are magnified uniformly in all dimensions by a magnification factor, said method comprising: producing a recording reference beam by passing diffuse coherent light from a coherent light source (441) through a first optical array (350) containing a plurality of image focusing means therein, and producing an object beam by passing diffuse coherent light from the same coherent light source through a second optical array (480) containing a plurality of image focusing means therein of the same number and arrangement as the first optical array,

a) wherein the distances between the centers of the focusing means of the second optical array are a multiple of the distances between the corresponding focusing means of the first optical array, said multiple being equal to the b) magnification factor, and, wherein the focal lengths of the focusing means of the second optical array are the same multiple of the focal lengths of the corresponding focusing means of the first optical array as described in column 4, lines 40-68, column 5, lines 1-68 and column 6, lines 1-44 as understood by the current claim language.

Regarding claim 36, McGrew teaches that the set for holograms is a plurality of holograms as described in column 4, lines 40-68, column 5, lines 1-68 and column 6, lines 1-44.

Regarding claim 39, McGrew teaches that a hologram is prepared by exposing portions of a photographic plate incrementally until the entire hologram is produced as shown in Figure 3.

Regarding claim 12, McGrew teaches (see Figures 3-8) preparing a hologram to be used as a front projection holographic screen for reconstructing magnified 3-

dimensional images projected from unmagnified integral photographs or holograms, wherein at least three monochromatic laser beams are used to prepare the hologram, such that the three wavelengths of laser light are complementary so as to produce the appearance of white light, said method comprising: a) optically splitting the first monochromatic laser beam into a reference beam and an object beam such that the reference beam has a spherical wavefront that appears to have been generated at an expected projection distance and the object beam has a cylindrical wavefront that appears to have been generated at a distance calculated as a focal point for that wavelength, and, exposing a transparent photographic plate with the reference beam and the object beam, wherein the reference beam exposes the entire plane of the photographic plate in all directions, and the object beam emanates from a line of light that extends across the entire photographic plate in the linear dimension at a focal distance from the surface of the emulsion for that wavelength, said focal distance being calculated based upon the distance between the line of light and an adjacent line of light; and, repeating the previous two steps for the second monochromatic laser beam wherein the line of light exposed by the object beam is adjacent to and parallel to the line of light exposed by the first monochromatic laser, and such that the two lines are not coincident; and, (d) repeating the first two steps for the third monochromatic laser beam wherein the line of light exposed by the object beam is adjacent to and parallel to the line of light exposed by the second monochromatic laser, and such that it is not coincident with the line produced by either the first or second monochromatic laser, and, repeating all of the above steps to ultimately a plurality of parallel adjacent sets of

three adjacent parallel lines produced by the three monochromatic laser beams that repeat in groups of three across the entire photographic plate as described in column 4, lines 40-68, column 5, lines 1-68 and column 6, lines 1-44 as understood by the current claim language.

Regarding claim 13, McGrew teaches that the reference and object beams both impinge on the same side of the photographic plate as described in column 4, lines 40-68, column 5, lines 1-68 and column 6, lines 1-44.

Regarding claim 14, McGrew teaches that the reference and object beams both impinge on opposite sides of the photographic plate as described in column 4, lines 40-68, column 5, lines 1-68 and column 6, lines 1-44.

Regarding claim 15, McGrew teaches that the object beams are repositioned optically been successive exposures of the photographic plate so as to produce parallel lines as described in column 4, lines 40-68, column 5, lines 1-68 and column 6, lines 1-44.

Regarding claim 16, McGrew teaches that the photographic plate is repositioned mechanically been successive exposures of the photographic plate so as to produce parallel lines as described in column 4, lines 40-68, column 5, lines 1-68 and column 6, lines 1-44.

Regarding claim 17, McGrew teaches that the wavelengths of the three monochromatic laser beams can be roughly characterized as red, blue and green, respectively as described in column 4, lines 40-68, column 5, lines 1-68 and column 6, lines 1-44.

Regarding claim 18, McGrew teaches that the wavelengths of the three monochromatic laser beams are all components of a single laser capable of producing white coherent laser light as described in column 4, lines 40-68, column 5, lines 1-68 and column 6, lines 1-44.

Regarding claim 19, McGrew teaches that the laser used is a krypton laser as described in column 4, lines 40-68, column 5, lines 1-68 and column 6, lines 1-44.

Regarding claim 20, McGrew teaches that the reference is a spherical wavefront comprised of several or all of the wavelengths produced by the white laser as described in column 4, lines 40-68, column 5, lines 1-68 and column 6, lines 1-44.

Regarding claim 21, McGrew teaches that the distance that each real image of the line of light used in the object beam is from the photographic emulsion is the focal length required for the particular wavelength of monochromatic light used to produce its portion of the hologram as described in column 4, lines 40-68, column 5, lines 1-68 and column 6, lines 1-44.

Regarding claim 22, McGrew teaches that the hologram is comprised of holograms produced as identical rectangular tiles, and the hologram is produced by assembling the tiles as described in column 4, lines 40-68, column 5, lines 1-68 and column 6, lines 1-44.

Regarding claim 37, McGrew teaches that said coordinated and complementary set of holograms is a single hologram as shown in Figures 3-8.

Regarding claim 38, McGrew teaches that some of the elements comprising said first and second optical arrays are holograms, and the remaining elements are

comprised of other types of optics as described in column 4, lines 40-68, column 5, lines 1-68 and column 6, lines 1-44 as is currently understood by the current claim language.

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Buchkremer et al US Patent 5,734,485 teaches a method for making a coordinated and complementary set of holograms as shown in Figures 1-7.
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alessandro V. Amari whose telephone number is (571) 272-2306. The examiner can normally be reached on Monday-Friday 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ava/AR  
01 April 2004

  
MARK A. ROBINSON  
PRIMARY EXAMINER